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✓ Integrated Predicated and Speculative Execution in the IMPACT EPIC Architecture (1998) ([Make Corrections](#)) (24 citations)

David I. August, Daniel A. Connors, Scott A. Mahlke, John W. Sias, Kevin M. Crozier, Ben-Chung Cheng, Patrick R. Eaton, Qudus B. Olaniran, Wen-mei W. Hwu
Proceedings of the 25th annual international symposium on Computer architecture



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.... basic blocks from various control flow paths into one region to improve compiler optimization opportunities and scheduling [12] 4] [3]. These hyperblocks are typically formed from an inner most loop body. Basic blocks are incorporated into a region based on a heuristic...

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D. I. August, D. A. Connors, S. A. Mahlke, J. W. Sias, K. M. Crozier, B. Cheng, P. R. Eaton, Q. B. Olaniran, and W. W. Hwu, "Integrated Predicated and Speculative Execution in the IMPACT EPIC Architecture," Proceedings of the 25th International Symposium on Computer Architecture, July 1998.
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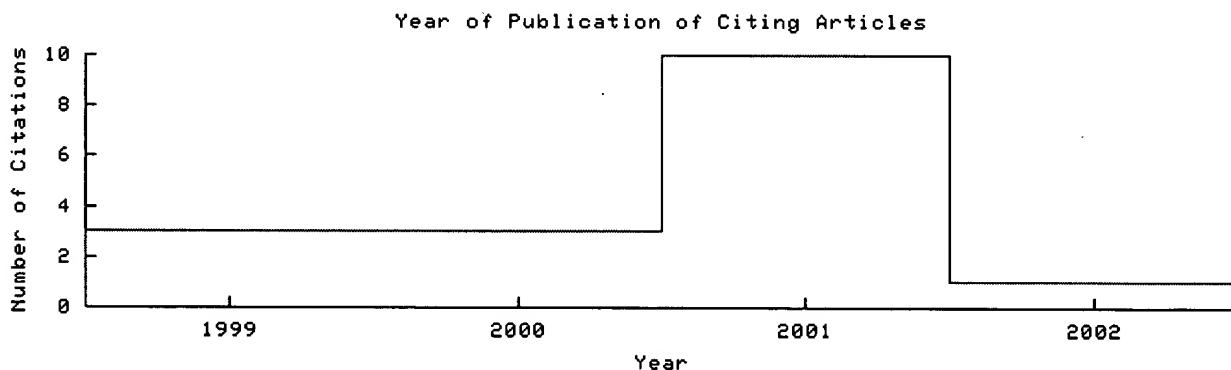
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Speculative execution, such as control speculation and data speculation, is an effective way to improve program performance. Using edge/path profile information or simple heuristic rules, existing compiler frameworks can adequately incorporate and exploit control speculation. However, very little has been done so far to allow existing compiler frameworks to incorporate and exploit data speculation effectively in various program transformations beyond instruction scheduling. This paper proposes a ...
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- Explicitly Parallel Instruction Computing (EPIC) architectures require the compiler to express program instruction level parallelism directly to the hardware. EPIC techniques which enable the compiler to represent control speculation, data dependence speculation, and predication have individually been shown to be very effective. However, these techniques have not been studied in combination with each other. This paper presents the IMPACT EPIC Architecture to address the issues involved in design ...
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